

REMARKS

Status of the Claims

Claims 1-13 are pending. Claims 1-13 are rejected. Claims 1 and 3-4 are amended. Claim 2 is canceled. No new matter has been added.

Drawings

Corrected drawings for Figures 4 and 6-7 are enclosed herewith.

Amendments to the claims and to the specification

Claim 1 is amended to incorporate the limitations of claim 2 to recite that the alignment pins are perpendicularly and positionally attached to direct placement of the device into a tissue mold. Claim 3 is amended to correct a typographical error and to clarify claim language by reciting that the cryoarray pins are attached operably to the mold plate to pass through the holes in the ejector plate (pg. 12, ll. 13-17; Figs. 1-3). Claim 4 is amended to clarify claim language by reciting that the ejector pins are attached to the ejector plate through the mold plate to lower and to raise the

ejector plate (pp. 15, ll. 5-7; Figs. 1-3). Claim 2 is canceled. No new matter is added.

The specification is amended to delete the title “Cross-Reference to Related Applications” and the priority reference to provisional U.S. Serial No. 60/250,084. No new matter is added.

Claim objections

Claim 3 is objected to for the recitation of “said said”. Claim 3 is amended to delete one “said” as a typographical error.

Rejection under 35 U.S.C. 102(a)

Claims 1-13 are rejected under 35 U.S.C. 102(a) as being anticipated by **Hoos et al.** (Laboratory Investigation, Vol. 81(10), pg. 1331-1338 (Oct. 2001)). Applicants respectfully traverse this rejection.

The Examiner states that **Hoos et al.** teach the cryoarray device recited in claims 1-5 (pp. 1335-1336; Figs. 3-4), the cryoarray system recited in claims 6-9 (pp. 1332, 1335-1336; Figs. 3-4), and the methods using the device/system recited in claims 10-13 (pp. 1335-1336; Figs. 3-4).

Applicants submit herewith a Declaration under 37 C.F.R. §1.132 signed by Carlos Cordon-Cardo declaring that the **Hoos et al.** disclosure of the cryoarray device/system and methods of use is not by another. The Declaration states that Axel Hoos did not contribute to the inventive concept of the instant invention and participated as coauthor of the reference, in which the instant invention is disclosed, which is a minireview of the opportunities and limitations of tissue microarray profiling of cancer specimens. Accordingly, Applicants respectfully request that the rejection of claims 1-13 under 35 U.S.C. 102(a) be withdrawn.

Rejection under 35 U.S.C. §102(b)

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by **Pinkel et al.** (U.S. 5,690,894). Applicants respectfully traverse this rejection.

The Examiner states that **Pinkel et al.** teach a cryoarray device comprising a mold plate, mold alignment pins, an ejector plate, ejector pins and cryoarray pins as recited in claims 1-3 (col. 5-12; Fig. 4). Furthermore, the Examiner states that cryoarray device, mold alignment pins and cryoarray pins are not given patentable weight because they do not have any structural

limitations associated with them. Additionally, claim 2 is drawn to an intended use of the mold alignment pins and is not given any patentable weight.

Pinkel et al. teach the fabrication and use of biosensors comprising a plurality of optical fibers with biological binding partners attached to the sensing end to detect analytes (Abstract). The optical fiber array is a unitary rod-like collective body comprising a bundle of coaxially aligned optical fibers with the binding partners at the sensing ends of the fibers to form a sensor face and the transmitting ends of the optical fibers are commonly aligned at the opposite end to form a transmission face (col. 8, ll. 11-16). The transmission face may be permanently or removably attached to a detector which may comprise lenses, phototubes, photomultipliers or charge-coupled devices (CCD) (col. 9, ll. 1-5).

Applicants invention is to a device comprising a mold plate, mold alignment pins, an ejector plate, ejector pins and cryoarray pins as recited in amended claims 1 and 3 which can be used to form an array for frozen tissue. The components of the device are interconnected such that, at a minimum, the ejector pins move through the mold plate to raise or lower the ejector plate over the cryoarray pins attached to the mold plate (pg. 12, ll. 13-17; pg.

15, ll. 5-7; Figs. 1-3). Applicants have canceled claim 2. Even without considering the patentable weight of the mold alignment pins and cryoarray pins, **Pinkel et al.** simply do not teach a device comprising a mold plate, an ejector plate and ejector pins as recited in Applicant's claims. Absent these teachings, Applicants respectfully submit that **Pinkel et al.** do not anticipate Applicant's claimed invention. Accordingly, in view of the arguments presented herein, Applicants request that the rejection of claims 1-3 under 35 U.S.C. §102(b) be withdrawn.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by **Fleming et al.** (U.S. Patent No. 4,654,989). Applicants respectfully traverse this rejection.

The Examiner states that **Fleming et al.** also teach a cryoarray device comprising a mold plate, mold alignment pins, an ejector plate, ejector pins and cryoarray pins as recited in claims 1-3 (col. 2-3; Fig. 1-5). The Examiner maintains that the cryoarray device, mold alignment pins and cryoarray pins are not given patentable weight because they do not have any structural limitations associated with them. Nor is claim 2 given any patentable weight as it is drawn to an intended use of the mold alignment pins.

Fleming et al. teach a vertical three-dimensional image screen or pin screen as an entertainment device (col. 1, ll. 14-22). The device comprises two apertured vertical parallel plates permanently spaced a distance less than the length of free moving pins passing through the apertures. The pins are horizontally displaced when an object is pressed against the pin ends and will form an image corresponding to the outline of the object so pressed. The pins are held in position by friction between the pins and the aperture surfaces (col. 2, ll. 10-49). The pins are returned to the initial position by tilting the device to use gravity or by physically pushing the pin heads (col. 3, ll. 15-23). Additionally, the device may comprise a third vertical transparent cover parallel to and permanently spaced from one of the first two vertical plates. This third plate prevents a user from pushing the pins completely out of the apertured device (col. 3, ll. 1-14).

Applicants' invention is discussed *supra*. **Fleming et al.** do not teach all the elements of Applicants' device as recited in amended claims 1, which incorporates claim 2, and 3. Neither of the vertical plates disclosed in **Fleming et al.** is an ejector plate. The vertical plates are connected by spacers at a permanently fixed distance and do not move. As such, the pins in the pin screen can

not comprise ejector pins to move one of the plates. The horizontal pins are not attached to either plate but move through the plates upon application of pressure not originating from the device.

Additionally, the pin screen requires that, both structurally and functionally, the plates be disposed vertically and the pins horizontally, thus the vertical plates can not have an upper and lower surface that is structurally significant. Applicants' device requires that structurally the plates are disposed horizontally, as they are recited as having an upper and a lower surface, to provide a functional device. The pin screen in **Fleming et al.** will not retain the image it is intended to make if placed horizontally.

At a minimum, absent teachings of an ejector plate and ejector pins, Applicants respectfully submit that **Fleming et al.** do not anticipate Applicant's claimed invention. Accordingly, in view of the arguments presented herein, Applicants request that the rejection of claims 1-3 under 35 U.S.C. §102(b) be withdrawn.

Rejection under 35 U.S.C. §103(a)

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fleming et al.** (U.S. 4,654,989), as applied to

claims 1-3 above, and further in view of **Vollom** (U.S. 6,298,587). Applicants respectfully traverse this rejection.

The Examiner states the teachings of **Fleming et al.** are as presented *supra*. However, **Fleming et al.** do not teach the device as comprising ejector pins that are capable of lowering and of raising the ejector plate over the cryoarray pins. **Vollmer** teaches the lowering and raising the ejector plate over the cryoarray pins (col. 1-2) and specifically incorporates **Fleming et al.** (col. 1). **Vollmer** teaches that a moving ejector plate is advantageous for allowing the pin screen to be reset while in a vertical position. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of **Fleming et al.** to have a moveable ejector plate, for the benefit of allowing the pin screen to be reset while in a vertical position.

Fleming et al. and Applicants' invention are as stated *supra*. Applicants submit that the teachings of **Vollmer** are as stated by the Examiner. One of ordinary skill in the art would be motivated to replace the transparent cover in **Fleming et al.** with a movable transparent plate to keep the pins from falling out completely when pushed to form an image and to reset the pins without having to tilt the device. However, as discussed *supra*, the

device in **Fleming et al.** is not Applicants' cryoarray device and including a movable transparent plate does not correct the deficiencies in **Fleming et al.**

The ejector pins in Applicants invention are attached through the mold plate to the apertured ejector plate. Downward pressure on the ejector pins moves the ejector plate downwardly over the cryoarray pins which are affixed to the mold plate and move with the mold plate. Activating the ejector plate removes the mold plate with the cryoarray pins attached from the recipient block of embedding medium. Releasing the ejector pins resets the cryoarray device for reuse (pg. 14, ll. 17 to pg. 15, ll. 11; Figs. 1-3).

The transparent plate in **Vollmer** is a solid structure which is moved horizontally to push against the heads of the pins, which are not attached to any component of the pin screen, to reset the pins. This distinctly teaches away from Applicants' invention. As such, even with motivation to combine the elements of **Fleming et al.** with those taught in **Vollmer**, the combination still is not Applicants' cryoarray device as discussed *supra*.

Applicants reiterate that **Fleming et al.** do not anticipate the instant invention as recited in claims 1 and 3. Combining **Vollmer** with **Fleming et al.** does not correct these deficiencies

and, therefore, the combination thereof cannot render Applicants invention, as recited in claims 1 and 3-4, obvious. Accordingly, in view of the amendments and arguments presented, Applicants respectfully request that the rejection of claim 4 under 37 C.F.R. 103(a) be withdrawn.

This is intended to be a complete response to the Office Action mailed September 8, 2003. If any issues remain outstanding, the Examiner is respectfully requested to telephone the undersigned attorney of record for immediate resolution. Applicants believe no fees are due, however, should Applicant be in error, debit any fees due from Deposit Account No. 07-1185 on which the attorney of record is allowed to draw.

Respectfully submitted,

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